



The official newspaper
of Big Bend National Park &
Rio Grande Wild & Scenic River
Volume 25, No. 1 Spring 2004

The Big Bend Paisano

Edith Guerrant



The Rockslide in Santa Elena Canyon

The Rio Grande

WELCOME TO BIG BEND NATIONAL PARK AND THE RIO GRANDE Wild & Scenic River! Big Bend is one of the largest and least visited of America's national parks. Over 800,000 acres await your exploration and enjoyment. From an elevation of less than 2,000 feet along the Rio Grande to nearly 8,000 feet in the Chisos Mountains, Big Bend includes massive canyons, vast desert expanses, and the entire Chisos Mountain range. Here, you can explore one of the last remaining wild corners of the United States, and experience unmatched sights, sounds, and solitude.

The Rio Grande weaves its way across the Chihuahuan Desert, carving canyons and providing moisture and habitat for wildlife as well as recreational opportunities for visitors. But it is more than just a river flowing through a desert area: the Rio Grande forms the international boundary between the United States and Mexico, both separating and uniting two very different countries and cultures.



Cutting through the landscape, the river defines a large curve that led an early American explorer to name the region "the Big Bend." Over time, the Rio Grande has inspired a wide variety of reactions from visitors. While the Spanish called the Big Bend area "El Desploblado," the uninhabited land, American Indian and Hispanic peoples survived and thrived along the river for centuries before American settlers arrived in the late 1800s. The first American explorers to follow the river declared Santa Elena Canyon "unfit for navigation," without venturing inside. Historian Walter Prescott Webb, writing in 1937, stated, "To understand the Big Bend one must keep in mind that the river came through the mountains." The power of the river, evidenced in the deep canyons carved through the rock, still awes visitors today.

Awe-inspiring as it is, the Rio Grande faces many challenges. In this issue of the Big Bend Paisano, we explore the many facets and issues of the Rio Grande; the live giving, life-sustaining river that geographically, ecologically and culturally defines Big Bend National Park.

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IN CASE OF EMERGENCY

Park Rangers are available to provide assistance. Dial 911 or (432) 477-2251

Phones are located at:
visitor centers,
campgrounds,
Camper Stores, and the
Chisos Mountains Lodge.

911

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NPS Photo

The Big Bend Paisano

Volume 25, No. 1



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The National Park Service was established on August 25, 1916. . . "to conserve the scenery and the natural and historic objects and the wildlife. . . and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." As conservation educators, the Division of Interpretation provides guided walks, talks, evening slide programs, workshops, and other educational activities as well as written materials such as this newspaper.



The Big Bend Natural History Association, established in 1956 as a private, non-profit organization, champions the mission of the National Park Service in facilitating popular interpretation of the scenic, scientific, and historic values of Big Bend and encourages research related to those values. The Association conducts seminars and publishes, prints, or otherwise provides books, maps, and interpretive materials on the Big Bend region. Proceeds fund exhibits, films, interpretive programs, seminars, museum activities, and research.

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Superintendent's Welcome

Welcome to YOUR Park

Welcome to Big Bend National Park and the Rio Grande Wild & Scenic River, two premier units of our nation's National Park System. We hope that your visit proves to be both meaningful and memorable, and that you take the opportunity to fully explore and experience this wonderful place.

Big Bend National Park is one of the most stunningly beautiful and ecologically diverse parks in the world. The Rio Grande Wild & Scenic River, a 196-mile section of river designated by Congress in 1978 because of its "outstandingly remarkable scenic, geologic, fish and wildlife, and recreational values," is equally beautiful, though far more remote.

The life line for both park units is the Rio Grande and this issue of the Paisano is devoted to that once mighty river. Today the river is in peril. Diminished quantity and degraded quality of water in the river are among the most complex and vexing resource challenges we face. The quantity and quality of water in the river impact not only vegetation and wildlife, but directly affects you, the visitor. I encourage you to talk to a Ranger while you're here, to learn more about the challenges facing the river, and to join with us in working to return the Rio Grande to its rightful place as one of the greatest rivers of North America.

Have a great time in YOUR national park.
Experience Your America!

John H. King
John H. King, Superintendent



Superintendent John King

Bienvenidos

Bienvenidos al Parque Nacional Big Bend y al Natural y Escénico Río Grande, dos unidades memorables del sistema de parques nacionales estadounidense. Esperamos que su visita sea significativa e inspirativa, y que usted aproveche la oportunidad de explorar y gozar de este asombroso lugar.

El Parque Nacional Big Bend es uno de los parques mas impresionantes y ecológicamente diversos del mundo. El Natural y Escénico Río Grande, una sección de río de ciento noventa y seis millas, fue designado para protección especial por el congreso estadounidense en 1978 por sus "valores recreativos y sobresalientes, incluyendo el paisaje, la geología y la vida silvestre," y es igualmente significativo, aunque mas aislado, que el Parque Nacional.

La fuente de vida de ambos parques es el Río Grande, y en esta edición del periódico El Paisano enfocamos este históricamente poderoso río. Sin embargo, el Río Grande ha recientemente caído en peligro ecológico. Los problemas ambientales más complejos y controvertidos enfrentados son la disminuida cantidad y degradada calidad del agua en el río. La calidad y cantidad del agua impacta no solamente la vegetación y vida silvestre, sino también a usted, el visitante. Durante su visita, le rogamos que hablen con un guardaparques a fin de aprender más sobre los retos ecológicos que enfrenta el río, y de unirse a nosotros en la lucha de regresar al Río Grande su puesto legítimo como uno de los grandes rios de Norteamérica.

John H. King
John H. King, Superintendent



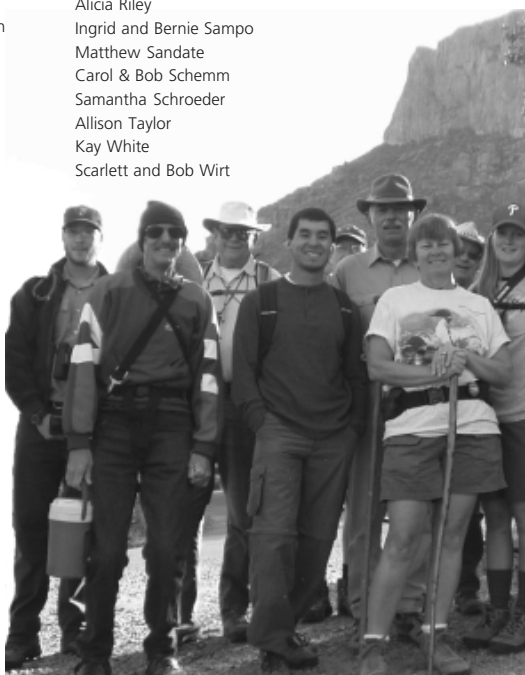
Volunteer Honor Roll

Each year, volunteers contribute thousands of hours to the National Park Service. A vital supplement to paid staff, volunteers bring special skills, dedication, and fresh approaches to our work in interpretation, visitor protection, maintenance, administration, and resource management.

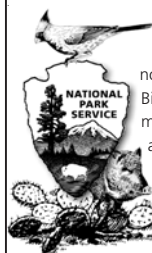
Join us in thanking the following individuals and organizations who have recently donated 100 or more hours in volunteer service to Big Bend:

Nettie & Gifford Babcock
Barbara and John Baldwin
Royann & Royce Brockett
Norma and Lloyd Burgi
Marsha & John Coates
Denise and John Curd
Nancy Daniel
Nancy Dickerson
Ken Fields
Kay and Rich Gordon
Charles Gorecki
Steve Harper
Ginny & Jim Herrick
Bob Herendeen
Whitney Hibbard
Sue and Bob Hostetter
June & Tony Jacobson
Don Janes
Katrina Jensen
Gail and John Kamaras
Mark Kirtley
Joan and Jack Lamkin
Greg Levandowski
Robin Mueller
Jack Norton
Les and Dana Over
Lee & Joe Pytel
Dori and Tom Ramsay
Becky Reiger

Alicia Riley
Ingrid and Bernie Sampo
Matthew Sandate
Carol & Bob Schemm
Samantha Schroeder
Allison Taylor
Kay White
Scarlett and Bob Wirt



Fall Volunteers ready for a hike to the South Rim



Did You know:

Park animals are wild. Do not feed or approach any of Big Bend's wildlife. Enjoy animals at a safe distance and allow them to find their own natural foods.

Do not remove any natural objects from the park, including rocks, cactus, reptiles, and fossils. Collecting specimens of any kind or defacing park features deprives other visitors. Leave everything as you found it for others to enjoy. If you must collect, pick up litter!

All bicycles, including mountain bikes, must remain on paved or unpaved roads. They are not allowed on hiking trails or off-road.

Motor vehicles must be licensed and street-legal. All motor vehicles must stay on established roadways open to public travel.

It's Up to You...

National parks have been described as the crown jewels of the United States. While enjoying the beauty of Big Bend National Park, please remember that few other nations have parks that can compare to those of the United States. They are something to be proud of. They are something to preserve.

The protection of Big Bend National Park is ultimately in the hands of the people who visit it. Your cooperation with park rules is one way to help ensure the park's survival.

Please, treat **your** park with care.



The Big Bend Natural History Association is a non-profit organization established to support the park's educational and scientific programs. BBNHA also publishes and distributes books, maps, guides, newspapers and other materials designed to enhance visitors' enjoyment and understanding of Big Bend National Park.

Big Bend Natural History Association (BBNHA) had a rough year in 2003. With gas prices high, a war in Iraq, uncertainty in the economy, and reduced visitation to the park, BBNHA actually lost money on our operations last year. This year is shaping up much better, and we're hopeful that spring will bring a great flower bloom and peak visitation.

Despite our financial woes, BBNHA charged ahead with a number of exciting projects. Our new bookstore at Amistad National Recreation Area is beautiful, and those of you traveling Hwy 90 through Del Rio should stop to see it. Seminar coordinator Sarah Bourbon has completely rebuilt our seminar program this year, adding such exciting trips as History on Horseback to the already popular seminars such as the Jeep Geology Tour. We've also added a Lodge and Learn program in conjunction with Forever Resorts (FR).

Our memorandum of agreement with Friends of Big Bend National Park (FBBNP) and the National Park Service (NPS) to expand the visitor center at Panther Junction and build completely new exhibits has been approved in Washington and should take place in 2005. FBBNP has already secured \$15,000 in grant money from Union Pacific Railroad and \$5,000 from Burlington Northern Railroad to rebuild the exhibits. Both BBNHA and FBBNP have committed \$50,000 in other funds to rebuild the visitor center. The NPS will come up with the remainder of the funds from fees collected in the park.

Our Housing Partnership Agreement with the NPS and FR is moving along quickly. BBNHA and the NPS completed a survey of our ten-acre tract in Study Butte. Park engineer Walt Keyes drew up a site plan for that acreage, and the NPS contributed public domain housing plans for the five duplexes that we intend to build in the first phase. FR is researching environmentally sound materi-

als and building techniques and is hiring an architect to adapt our plans to our materials and methods.

BBNHA and FR have also partnered to bring you the first ever Big Bend Nature Festival on August 19-22, 2004. World-renowned birders Victor Emanuel and Ro Wauer will be lead speakers and presenters. Forever Resorts will provide special room rates, and BBNHA will provide numerous guided tours for birders and other nature lovers. The Brewster County Tourism Council and Lajitas Resort have also agreed to help with the promotion of this event. Make your plans now to get in on the ground floor of what we hope will be a very successful annual event.

As always, we appreciate your continued support and encourage you to become members of both BBNHA and FBBNP.

Mike Boren
Mike Boren, Executive Director

Seminars

Spend some quality time with an expert on Big Bend birds, tracks, black bears, dinosaurs, geology, and much more with our Natural History Seminars Program. Now in its 16th year, the immensely popular program sponsored by BBNHA continues to grow and improve.

There are still slots available for the Spring session. Sign up today!

Spring 2004 Seminar Schedule

March 27-28 <i>Melissa Forsythe</i>	Backpacking for Women
April 3 <i>Don Corrick</i>	History on Horseback
April 4 <i>Patricia Manning</i>	Desert Plants
April 10 <i>Bonnie McKinney</i>	Maderas del Carmen
April 17 <i>Gary Carver</i>	Desert Survival
April 24 <i>Alan Tennant</i>	Reptiles of the Desert
April 30 - May 2 <i>Mark Adams</i>	Birds of the Desert
June 4-6 <i>Roland Wauer</i>	Butterflies of the Desert

Average cost for a seminar is \$50 per day with most seminars running 1-2 days. Class size is limited to 15 participants to ensure individualized instruction. Seminar participants may also take advantage of free camping in one of Big Bend's group campgrounds.

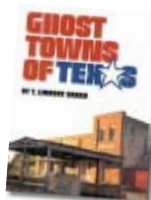
To register for a seminar or to receive a complete catalog, contact us at PO Box 196, Big Bend National Park, TX, 79834 or call 432-477-2236. You may also e-mail us at bibe_bbnha@nps.gov



Featured Publications

Have a hunger for the desert? Take a bite out of our great selection of books and publications. Our bookstores offer a wealth of books, maps, checklists, and field guides carefully selected to help you enjoy your visit to Big Bend National Park.

Stop by any visitor center, or order these online at bigbendbookstore.org



Ghost Towns of Texas

The state of Texas is full of former towns and communities that fall under the banner of "Ghost Towns." Castolon, Terlingua, and Hot Springs, all ghost towns inside Big Bend, are only a few of the 86 ghost towns described here. Read about each town's founding, its former significance, and the reasons for its decline. There are maps and instructions for reaching each site and numerous current

and vintage photos. The historical research is very in-depth and resurrects these "towns that time forgot" in the reader's mind. \$24.95.



River Guides to the Rio Grande

Printed on waterproof paper to insure their long-term usefulness, these guides contain topographic strip maps showing both sides of the river. All rapids and major topographical features are labeled. Interesting bits of human and natural history, useful telephone numbers, and put-in/take-out information are also included. **River**

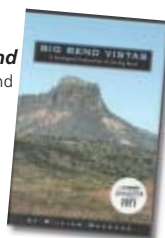
Guide 1, Colorado and Santa Elena Canyons, \$3.00. River Guide 2,

Mariscal and Boquillas Canyons, \$3.00. General Information (not waterproof), including river use regulations, equipment needs, and helpful hints, \$1.00 or free with purchase of one of the other guides.

Big Bend Vistas

A Geological Exploration of the Big Bend

This book takes you along the highways in Big Bend National Park, describing and explaining the geology and landscapes as you go. It is divided into three sections, begins with a brief history of the geology of the area, and is written in clear, non-technical terms. Includes 75 color photographs and 120 maps and drawings. 255 pages. \$27.95.



Beneath the Window

Patricia Wilson Clothier grew up, as the title suggests, beneath the Window that drains the Chisos Basin. Her father, Homer Wilson, operated one of the most important ranches in the Big Bend prior to the creation of the National Park. This is her memoir of the joys and sorrows, the loneliness and the danger, of ranch life in Big Bend in the 1930s and '40s. Black and white photos. 167 pages. \$17.95



Quiet Time for Falcons



Big Bend National Park has always been a stronghold for the peregrine falcon. While these magnificent birds of prey were once facing extinction, a small population lingered among the remote canyons and mountains of Big Bend. Although making a comeback in many areas, in Texas there are only 12 nesting pairs, and the birds remain on the State's endangered species list. Last year, only six young fledged from park nests.

Falcons are known to abandon active nests at even the smallest amounts of human disturbance. To ensure quiet and disturbance-free nesting, the park has temporarily closed certain areas to all public entry. Help us protect your falcons!

Falcon Nesting Zones

February 1 - July 15

The following areas are closed to all entry:

- Casa Grande above 6,600'
- The Southeast Rim Trail
- Northeast Rim Trail to campsite NE-4
- Within 1/4 mile of the Santa Elena Canyon Rim
- Within 1/4 mile of the Mariscal Canyon Rim

Reserve a Campsite

New Reservation System now available!

Big Bend National Park is pleased to announce its association with the National Recreation Reservation Service and Reserve America in accepting campground reservations at two of the campgrounds in the park.

Forty-three (43) sites at Rio Grande Village campground and twenty-six (26) sites at the Chisos Basin campground are reservable from November 15th to April 15th each year. Visitors may contact ReserveUSA year round to make reservations for the period of November 15th through April 15th of each year. All remaining campsites in these two campgrounds and the entire Cottonwood campground remain on the first-come first-serve basis.

Group campsites at Rio Grande Village, the Chisos Basin, and Cottonwood Campgrounds are reservable year round and res-

ervations may be made 360 days in advance. Reservations for Rio Grande Village and the Chisos Basin campgrounds family-type sites may be made 240 days in advance.

Reservations may be made through the Internet: www.reserveusa.com, or by calling 1-877-444-6777. Big Bend National Park cannot make reservations.



Entrance Fees & Big Bend

Why Do Parks Charge An Entrance Fee?

Much of the funding for Big Bend and other national parks comes from American taxpayers. However, protecting this land and ensuring that you have a safe, enjoyable and educational experience costs more than this tax base provides. Therefore, the U.S. Congress determined that people who use federal lands should pay fees to offset the difference.

Where Does Your Money Go?

Twenty percent of the money collected from entrance and campground fees is redistributed to units of the National Park System that do not charge fees to assist in the upkeep and upgrade of those areas. Eighty percent of the money *stays in Big Bend National Park*.

How Is Your Money Used?

Your entrance and campground fees help Big Bend National Park complete important projects that directly benefit you and other park visitors.

Recent Projects at Big Bend Made Possible By Your Fees:

- Reconstruction of the Rio Grande Village (RGV) nature trail boardwalk
- Improvements to the Persimmon Gap Visitor Center
- Installation of toilet at Hot Springs

Future Projects:

- Rehabilitate the RGV Amphitheater
- Develop a visitor center at Castolon
- Major expansion of the Panther Junction visitor center.

Big Bend and the Border

While Visiting A Border Park

Big Bend National Park shares the border with Mexico for 110-miles. This is a remote region, however each year hundreds of people travel north through the area seeking to enter the United States. Please keep the following in mind while visiting Big Bend:



If you see any activity which seems to be suspicious, illegal, or out of place please do not intervene. Report it to a ranger as quickly as possible.



It is possible you could encounter an individual or small group trying to walk through the park with little or no water. Please do not stop, but instead, immediately report such occurrences to a ranger. Lack of water is a life-threatening emergency in the desert.

A visit to Big Bend is a wonderful experience to learn about the park's history and to experience a wide variety of natural history and recreation options. The park's shared border with Mexico is part of our shared landscape and a chance to experience and learn about our neighbors. A few simple steps can help keep the park safe for everyone who is here.



Crossings Remain Closed

A reminder that entering the U.S. at other than an authorized border crossing point is illegal. There are NO authorized crossings in Big Bend NP. *Crossing at Boquillas, Santa Elena, or other locations along the Rio Grande is prohibited.* The closest legal ports of entry are at Del Rio and Presidio, Texas.

The U.S. Attorney's Office has indicated that it will prosecute any criminal violations regarding these illegal crossings. If you re-enter the United States at any point within Big Bend National Park, you may be liable for a fine of not more than \$5,000 or imprisonment for up to one year, or both.

Please consult Park Rangers for the latest updates on this situation.



Surf Big Bend

Official NPS Website



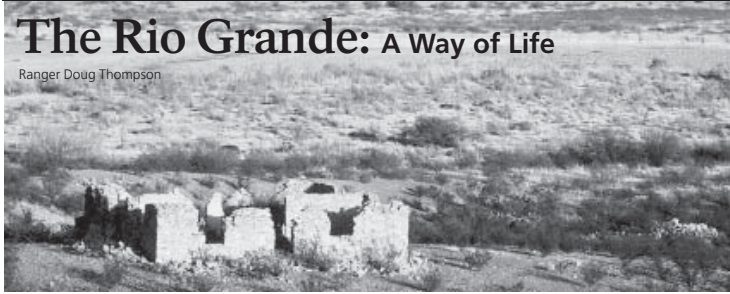
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www.nps.gov/bibe

The Rio Grande: A Way of Life

Ranger Doug Thompson



The Rio Grande has shaped the Big Bend for millions of years, bringing life-giving water to an otherwise arid region and creating a beautiful, green ribbon of vegetation through the desert. Along its banks, a variety of animals and birds have found a suitable environment in which to live and raise their young. Not surprisingly, human beings also have been drawn to the river, and by the early twentieth century, they had settled along its banks and created a way of life based on its plentiful water and the fertile soil of its flood plain.

By 1920, subsistence farming and/or cash-crop farming had developed in four areas along the Rio Grande: at Lajitas, located just outside the western boundary of Big Bend National Park; at Castolon, located inside the park about twenty miles down river from Lajitas; at San Vicente, along the park's southwestern boundary; and in the area around today's Rio Grande Village. Whenever the river flooded in these areas, it deposited fertile silt over its flood plain, and during the growing season, its flow provided water for irrigation.

Castolon is perhaps the best reminder of the simple lifestyle that developed along the river. Around 1901, a few Hispanic farmers began to settle there. The first was Cipriano Hernandez, a native of Chihuahua, Mexico. Seeking a better life for his family, he built an adobe home at the edge of the floodplain and began to raise wheat, corn, oats and a few other grain crops and

vegetables. Eventually, about thirty-five Hispanic families came to the area to farm. Although spread out for miles along the river, they tended to cluster in several small communities, including Castolon, La Coyota and Terlingua Abajo.

These Hispanic families were mostly self-sufficient and needed little outside support for their way of life. Using traditional skills, they built their homes from rock, adobe, river cane and other native materials. They also used simple methods to irrigate and farm the land, raised goats, hogs and other livestock, and had only infrequent contact with the outside world. Noting the Hispanic farmers' success, a few Anglos also began to purchase land around Castolon. In 1914, rancher Clyde Buttrill bought several sections of land from Cipriano Hernandez and Patricio Marquez. Shortly afterward, James Sublett, Albert Dorgan and Wayne Cartledge (manager of the *La Harmonia* company) also came to the area.

These men were very different from their Hispanic neighbors. Instead of using simple farming techniques, they began to cultivate the land with heavy, mule-drawn equipment, and they drew irrigation water from the river with steam-powered pumps. Instead of farming at a subsistence level, they introduced cotton and a variety of other new crops, shipping them to the outside world for profit.

In time, Wayne Cartledge's *La Harmonia* company farm became a model of agricultural progress and productivity. Cartledge introduced many new crops to the area, including fruit trees, honeybees and turkeys. In the early 1920s, he began growing cotton, and in 1923, after purchasing and bringing a cotton gin to Castolon, he began ginning his own crops. During the next twenty years, he shipped over 2,000 bales of cotton to market.

Today the way of life that began to develop along the Rio Grande one hundred years ago is gone, and little evidence remains of the farms that once flourished on the river's banks. However, the intriguing story of farmers prospering in the desert adds to the richness of Big Bend's history and contributes to the enjoyment of today's park visitors.

Exploration of the Rio Grande

Ranger Mary K. Manning

Today, most people see a float trip on the Rio Grande as just part of a fun vacation in the Big Bend area. Visitors can schedule a river trip with a local outfitter, or those with enough experience can run the river on their own. Rapids tend to be minor in most stretches, and the biggest challenge these days might be finding enough water in the river to avoid having to get out and drag your boat through the mud. Floating this stretch of the Rio Grande hasn't always been this easy. The remoteness and ruggedness of the Big Bend area, its wilderness character, and bad reputation intimidated many potential explorers and presented constant challenges to those who did venture here. Although the U.S. and Mexico agreed in 1848 that the deep channel of the Rio Grande would form part of the boundary between the two nations, it would be another 50 years before this boundary was completely mapped.

This part of the river-the stretch adjacent to what is now Big Bend National Park-was the last section to be navigated and surveyed. Upstream of the Big Bend area, from El Paso to Presidio, the river channel was-and still is -often dry. The lower Rio Grande, from Langtry to Brownsville, was a quiet, peaceful river, with no fearsome canyons or wild rapids. Between Presidio and Langtry, however, the river was a mystery. It flowed through "El Desploblado," the uninhabited land. There were rumors of impassable canyons and rapids, as well as alleged blood-thirsty bandits and marauding Indians lurking behind every rock.

In an effort to determine the exact boundary between the U.S. and Mexico along the Rio Grande, President Polk assigned Lieutenant Colonel W. H. Emory to head a boundary survey team to map this unknown area. In 1852, Emory appointed Marine Tyler Wickham Chandler to head the field survey; his crew included a surveyor and artist, a cartographer, a geologist, and a naturalist, among others. Emory also arranged for them to have a military escort of 35 armed men, led by Sgt. Duff Green.

The men had problems from the beginning. Shortly downstream of Presidio, they lost 75 of their 80 mules, and only 2 of the remaining animals still had their loads attached. After losing some boats and supplies in a long rapid somewhere upstream of Santa Elena Canyon, the men had to camp-probably near present-day Lajitas - and wait until they could get more supplies delivered from Presidio. Santa Elena Canyon presented their first major surveying challenge, when two of the men scouted the canyon and determined that it was "unfit for navigation." Limited to viewing the canyon only from the upper rim, the men found that this made precise surveys impossible. The men sent an empty boat through the canyon and waited downstream to see if it would make it through. According to their notes, "no two planks came out together." Mariscal Canyon claimed another of their boats, this one containing food, clothing, and bedding. Chandler ended the survey downstream of Boquillas Canyon, probably near the current park boundary. They had intended to continue through the Lower Canyons on to Langtry, but stopped due to low supplies, badly damaged boats, the poor condition of the men, and the difficulties that they knew lay ahead.

On December 19, 1881, a group of Texas Rangers led by Captain Charles Neville started downstream from Presidio in three boats and surveyed the river along what is now Big Bend National Park. Even before reaching Santa Elena Canyon, they crashed into a rock and lost most of their food and gear. Locals said that Santa Elena Canyon was "utterly impassable," as no one had ever successfully navigated it before. Hearing this, two of the rangers deserted the trip before they even reached the canyon. The remaining men spent a day and a half portaging their boats and gear around the Rockslide, a boulder-strewn maze in the canyon that presents problems to boaters even today. Neville watched their progress from high above on the rim of the Mesa de Anguila. Though they by-



View of the Chisos Mountains as they appeared to American Explorers in 1852.

passed the Rockslide, this was the first documented float trip through Santa Elena Canyon. Neville's crew spent 52 days on the river and ended their survey near Maravillas Canyon, possibly close to where the previous survey had ended.

It wasn't until 1899 that Robert Hill, an officer of the U.S. Geological Survey, led a crew that successfully floated and mapped the last unknown stretch of the Rio Grande. He prepared his boats by having cleats installed on the bottoms as protection against the constant scraping over rocks. Aware of the many dangers facing the crew, he enlisted men who were handy with both guns and oars. Hill even had a guide, James MacMahon, a fur trapper who had floated the river three times by himself in pursuit of beaver. MacMahon's maps showed only rapids and good beaver trapping sites, but Hill credited the trapper's knowledge of the river with saving the survey crew from harm on a daily basis. They surveyed the river from Presidio to Langtry, rowing over ten hours each day for over a month. Upon leaving the river at Langtry, Hill noted,

"We had successfully navigated and mapped 350 miles of a portion of one of America's greatest rivers which hitherto had been considered impassable; we had escaped dangers which had overwhelmed those who had attempted the canyons before; and our little party dispersed contented with its success."

It's hard to look at the Rio Grande today and imagine the difficulties that confronted these early explorers. Dams, diversions, and other uses, along with prolonged drought, have changed one of America's wildest rivers into a shallow stream, barely knee-deep. We may never know the same river that these brave men faced. But amidst their journal notes of hardship and tribulation, they also wrote about the wonders of the Big Bend country - the vibrant colors of the rocks, the changing skyline seen from deep within a river canyon, and even the way the light of the full moon played along the high canyon walls. Although the quality and quantity of the Rio Grande have changed in the past hundred years, its beauty and wildness have not.

Water: A Thumbnail Sketch of its History in the Big Bend

Ranger Rob Dean



Deserts and water are intrinsic opposites, each defining the other, in a relationship that is distinct, dramatic, and dynamic. While representing the best protected example of the Chihuahuan Desert, Big Bend National Park's intricate geological, natural, and cultural histories are water driven. Few places on earth offer such a premier example of this relationship as the association of the Rio Grande and the desert in Big Bend.

The geological history of Big Bend is very complex and reflects the importance of water in geological processes. Geologist Ross Maxwell conducted the first major study of Big Bend's geologic history during the early years of the park's development. Maxwell noted in his book *The Big Bend of The Rio Grande* that only recently has man appreciated the role of water in the formation of rocks through sedimentation. Throughout geologic time spanning many millions of years, vast deep oceans and shallow seas have recycled the eroded sediments from surrounding mountains forming the rich limestone ranges as seen near Persimmon Gap, Boquillas, and Santa Elena Canyon. Water was also important during Big Bend's volcanic era some 38 million years ago in that rising magma contacting the water table caused huge steamy explosions, rearranging the landscape into fantastic shapes seen along the scenic Ross Maxwell Drive. While water creates new rock, its erosive nature is best evident in the deeply etched canyons characterizing the Rio Grande.

Water has been a major influence in Big Bend's vibrant natural history. The deep oceans and shallow seas dominating Big Bend's early geological history left rich fossil treasures such as ammonites, mollusks, ancient petrified trees, and dinosaur bones. All life evolves in response to environmental pressures, and 10,000 years ago Big Bend's environment began the slow process of drying out which resulted in today's Chihuahuan Desert. The desert encouraged wildlife adaptations; a life of limited water, a life of conservation, a life of hardiness. Succulent, waxy surfaces, small leaves, spreading root systems, deep root systems, dormant lifestyles characterize arid adapted plants; animals evolve smaller body sizes, are active

at night, or metabolize water from their foods in response to water or the lack of it. Water's influence today is reflected in the amazing transformation of a lifeless-appearing desert into a verdant, life-filled landscape immediately after a rain. Abundant rain provides food in the form of seeds, berries, nuts, and succulent grasses, perpetuating a complex food chain.

It was the rich landscape that attracted man. Cultural history is defined by man's presence, and man first ventured into Big Bend as the climate dried. At that time, the Rio Grande was naturally free flowing with plentiful water, its few tributaries thriving and fertile, allowing early cultures access to the resources necessary for existence. Archeological finds mirror man's link to water; thousands of Native American habitation sites abound - all within reach of a water source. Spanish explorers followed, finding thriving communities of farming Native Americans irrigating their fields of corn and squash along the river's banks. By the 1880's, man's grasp for water was nearly complete in Big Bend as all major water sources supported the western advance into a still isolated frontier. These hardy souls endured isolation and hardship, seeking opportunity as cattle ranchers, homesteaders, farmers, and miners using the natural resources and water with impunity to fuel a growing nation. By the mid 1920's, the rich desert grasslands were disappearing due to overgrazing; the tree-lined streams were denuded and drying. Man hoped it would rain to replenish the land, renew the streams and fill the river; hope in the renewing power of water continued through the 1940's until it became clear that nature was more powerful than hope.

Today, water is still in short supply, and unable to meet the increasing demands of man's growth. The Rio Grande flows with less water today than 20 years ago. Many reliable springs no longer flow or flow only intermittently. Invasive exotic species such as Salt Cedar monopolize springs, soaking up water, transforming soils to salt beds; feral hogs and trespass livestock dig up or trample springs, disrupting the delicate balance required to keep them flowing. Sheet flooding after a downpour rearranges and erodes the exposed desert soils because the soil holding grasses has disappeared.

Our water challenges are being addressed with efforts to re-establish the once magnificent desert grasses and control the exotic species of plants and animals. Monitoring springs, recording river flows, water quality and quantity are tools for managing the resource. The water issues facing Big Bend National Park are not easily solved and reflect a growing concern with all of earth's water. With sound conservation practices, public awareness and time, one day the mighty Rio Grande, the rich desert grasslands, and the clear flowing streams and springs may recover. Water pays little heed to time and only time will tell.

The Exotic Invasion

Ranger Angelina Yost

Exotic plants and animals, introduced species not indigenous to an area, can wreak havoc on natural ecosystem processes. Exotic species potentially can compete more successfully for resources in their new environment than their native counterparts because they have no direct predators. Once established, they often take over an area, becoming a threat to the biodiversity and ecological integrity of the landscape. The Rio Grande, although designated "a wild and scenic river" is no exception to this invasion. The tamarisk, giant reed, bullfrog, red-eared slider and the nutria have been identified as the biggest threats to the indigenous plants and animals in the Rio Grande.

Tamarisk, or Salt Cedar, is a drought-tolerant woody shrub or tree from the Mediterranean. It was introduced as an ornamental shrub and was used for erosion control and windbreaks. The giant reed, also known as wild cane, was introduced for similar reasons. The giant reed is a bamboo-like perennial grass from India that often grows to over 20 feet in height. The reproduction rate of both plants is remarkable. Both plants grow rapidly and can quickly invade new areas, forming pure stands at the expense of other species, especially after a fire.

Additionally, both plants choke and crowd out native plants, reducing the biodiversity and habitat for many indigenous animals. The tamarisk has an added ability to inhibit the growth of surrounding vegetation by exuding salt from its leaves, increasing the salinity of the soil. Once established, these plants have the ability to outcompete and completely suppress native vegetation. As a result, these plants are an ecological disaster having infested the major river systems in the southwest, including the Rio Grande. A major research effort aimed at riparian restoration on the Rio Grande was launched in 2002. Working with a variety of partners, including the US Bureau of Reclamation, World Wildlife Fund and the Protected Areas of Santa Elena and Maderas del Carmen, park staff are installing a restoration project near Castolon.

Both the tamarisk and the giant reed end up providing habitat for bullfrogs. Bullfrogs are large amphibians that feed on almost anything. The impact of bullfrogs is a major concern, especially its predation on the native fauna, including the federally listed endangered Big Bend mosquitofish, the Rio Grande leopard frog, and other species. One of the turtles, the rare Big Bend slider (*Trachemys gaigeae*), is being threatened by an additional exotic species, the red-eared slider (*Trachemys scripta elegans*). Local

citizens and visitors, who had originally acquired the red-eared sliders as pets, released them in Big Bend National Park and the surrounding area. The male red-eared sliders are larger and more aggressive than the female Big Bend sliders. They essentially chase, wear out and subsequently breed with the female Big Bend sliders. The concern is to preserve the unique gene pool of this rare

native species. The park is currently working on a management strategy to preserve the genetic integrity of the Big Bend slider by possibly trapping its exotic counterpart. A proposal to study the impact and distribution of the bullfrog is also under discussion.

Finally, nutria, a "rat-like" mammal from South America, is the animal most capable of

destroying the habitat along the Rio Grande by direct consumption of the native vegetation. Nutria were originally introduced into the US for their fur. Nutria have cleared natural vegetation from large areas within the ponds at Rio Grande Village where the endangered mosquitofish is found. Nutria activity severely compromises the habitat of fish, invertebrates, mammals and birds dependent on the vegetation for shading, feeding, hiding and reproductive cover along the river. The removal of native vegetation could also promote exotic plant establishment, and displace the Mexican subspecies of the American beaver (*Castor canadensis*). Methods of removal could be trapping, shooting or poisoning. The most efficient and acceptable means of nutria removal is still being debated.

Exotic species, once introduced, can be very difficult to control. The exotic plants displace native vegetation and end up providing better habitat for exotic animals. Exotic animals often consume or destroy native plants, making it easier for the introduction of exotic plants. Although Big Bend National Park recognizes the problems, it is faced with the lack of funding and personnel to research and study the most efficient methods of removal. Hopefully, working with our partners on both sides of the border, information can be gathered to design and implement restoration efforts throughout this important riparian ecosystem.



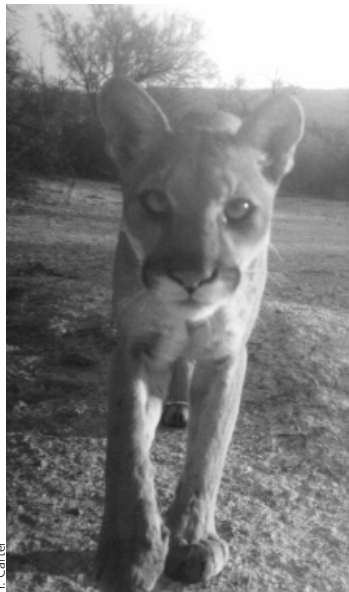
The Nutria is capable of destroying river habitat

Mountain Lion Country

IF BIG BEND HAD A SYMBOL, IT MIGHT WELL BE THE MOUNTAIN LION—the embodiment of freedom and wildness. Solitary and secretive, this mighty creature is the unquestioned lord of its natural world. As one of Big Bend's top predators, *Felis concolor*—"cat all of one color"—is vital in maintaining the park's biological diversity. Within the delicate habitats of the Chihuahuan Desert, mountain lions help balance herbivores (animals that eat plants) and vegetation. Research shows that cats help keep deer and javelina within the limits of their food resources. Without lions, the complex network of life in Big Bend would certainly be changed.

Encountering a mountain lion, however, can lead to conflicts in maintaining the balance between natural processes and visitor enjoyment and safety. Since the 1950s, there have been more than 800 sightings of mountain lions by visitors. While over 90 percent of these sightings were along park roadways, encounters along trails have also occurred. Since 1984, four lion and human encounters have resulted in attacks on people. In all cases, those attacked recovered from their injuries and the aggressive lions were killed, preventing them from playing out their important natural roles. The more we know about lions, and the less we seek an encounter, the better able we will be to make life easier for them and for us.

How much do you really know about this powerful and wild cat? Mountain lions live throughout the park, including the Chisos Mountains where they prefer to use trails. Your chances of encountering an aggressive lion are remote. What can you do to minimize the consequences of an encounter? Avoid hiking alone or at dusk or dawn. Watch children closely; never let them run ahead of you.



NEVER RUN FROM A LION!

Do not crouch down; the lion has seen you long before you saw it.

Hold your ground, wave your hands, shout! If the lion behaves aggressively, throw stones.

Convince the lion that you are not prey and that you may be dangerous yourself.

If you have small children with you, pick them up and do all you can to appear large.

Report all lion sightings to a park ranger.

The lion's role is a part of the health and welfare of the entire ecosystem. Research and further human understanding of the cat's habits pave the way for conservation efforts in its behalf. As we discover more about the lion, we fear it less and appreciate it more. For many visitors, just seeing a track, or just knowing lions are out there, will be reward enough.

Black Bears

THE RETURN OF BLACK BEARS TO BIG BEND National Park is a success story for both the bears and the park. Native to the Chisos Mountains, bears disappeared from this area during the pre-park settlement era. After an absence of several decades, bears began returning to the park from Mexico in the early 1990s.

Today, wildlife biologists estimate that up to 12 black bears may live in the park. Though they prefer the wooded Chisos Mountains, bears also range along the Rio Grande and through - out the desert, particularly when drought dries up their regular water sources in the mountains.

Black bears are omnivorous. They eat large amounts of nuts, fruits, sotol and yucca hearts, insects, and smaller quantities of eggs, small mammals, reptiles, amphibians, honey, and carrion. Their strong sense of smell also leads them to human foods, and they can quickly open coolers, backpacks, and trash cans when enticed by food odors.

Bears normally avoid humans, but bears that learn to get food from human sources often become aggressive in their attempts to get more "people" food. When humans disobey the rules of both the park and nature by feeding bears, it is the bears that end up paying the ultimate price. Rangers may have to kill bears that lose their fear of people and

endanger humans in their attempts to get our food. Fortunately, Big Bend has not had to kill any bears, but some national parks destroy several bears each season; we hope that through educating visitors about proper

behavior in bear country, we can avoid this tragic outcome.

Big Bend has made it easy to keep edible items away from bears. Campers at the Chisos Basin Campground, at High Chisos backpacking sites, and at some primitive roadside campsites will find bearproof storage lockers for storing all edibles. Hard-sided vehicles are also suitable for storing edible items. All dumpsters in the Chisos Mountains developed areas are bearproof, as well. And remember, a bear's definition of an "edible" is far broader than ours; lock up sunscreen, skin

lotion, toothpaste, soap, and other toiletries whose odors might attract wildlife.

There really are no problem bears - only problem people. Carelessness can kill. Don't be responsible for the death of a bear. Follow the guidelines below. Pay close attention to the food storage rules posted in the Basin campground and on your backpacking permit. Your actions affect both Big Bend's wildlife and future park visitors.

With your help, bears and humans CAN live safely together in Big Bend National Park.



A small population of black bears lives here. Please help us keep them wild by storing all food items properly.

Don't Call Me Pig!

FOR MANY VISITORS TO BIG BEND NATIONAL PARK, SEEING A JAVELINA (hav-uh-LEE-nuh) is a new experience.

These curious creatures, also known as collared peccaries, are only found in the United States in Texas, New Mexico, and Arizona. They are covered with black, bristly hairs and generally weigh between 40 and 60 pounds. They usually travel in groups called bands that consist of 10-25 individuals. Peccaries have a highly developed sense of smell, but very poor vision.

Physically, javelinas resemble pigs, but in reality, they are not closely related to pigs at all and have been genetically distinct from them for millions of years. A closer look reveals several major differences between the two animals. Javelinas have 38 teeth; domestic pigs and wild boars have 44. The canine teeth of the javelina are short and straight, while those of pigs are longer and curved. Javelinas have a



Collared peccaries live throughout Big Bend

scent gland that they use to mark their territory that pigs do not have. Pigs sweat to keep themselves cool, but javelinas must instead cool themselves in available water sources or by staying in the shade.

A javelina's diet includes prickly pear cactus, grasses, mesquite beans, pinyon pine nuts, fruits, berries, and seeds. Unfortunately however, many javelinas now include human food as part of their diet. Every year we are seeing more and more campsites in the park raided by javelina. Although normally not aggressive, they can be when food is involved. Protect yourselves and our javelinas by properly storing all your food inside a vehicle or in the food storage lockers provided in the campgrounds. Do not leave coolers or food boxes unattended on picnic tables or in a tent. Flatten tents when you are away from your campsite. It is important that

javelinas and all park animals eat their natural food sources to stay healthy and safe. With your help, these unique animals can continue to thrive and thrill park visitors for years to come.

Keep ALL Wildlife WILD

In the Basin Campground

- Store food, beverages, trash, toiletries, pet food, and dishes in the bearproof storage locker provided at your site.
- Keep your campsite clean. Take trash and food scraps to a dumpster.
- Dump liquids in restroom utility sinks, not on the ground.
- Ice chests and coolers are not bear-proof; store them in your vehicle.

Cyclists

- Use food storage lockers where provided.

At the lodge

- Leave nothing outside your room, on the balcony, or on the porch.

When hiking

- Never leave packs or food unattended.
- Avoid carrying odoriferous food and toiletries.
- Leave excess food and beverages in your trunk or food storage box
- Carry out all trash, including orange peels, cigarette butts, and left-over food.

Now That You're Here, What Can You Do?

You've driven many miles to get here, and have finally arrived at your destination: Big Bend National Park. But now what? Now that you're here, how do you spend your time? Where should you go? What should you explore? The park is big, and often visitors have a limited amount of time to explore.

One Day



If time allows, drive to the **Chisos Mountains** to take in the spectacular mountain views. Walk the 0.3-mile self-guiding Window View Trail to get a feel for the mountain scenery.

A trip along the **Ross Maxwell Scenic Drive** will give you a taste of the Chihuahuan Desert and will lead you to the Rio Grande. There are scenic overlooks and exhibits along the way. Sotol Vista, Mule Ears Overlook and Tuff Canyon are all worthwhile stops. The short walks to the Sam Nail (Old) Ranch and Homer Wilson (Blue Creek) Ranch and a visit to the Castolon Historic District will give you a glimpse into Big Bend's past.

A highlight is the short (*1.6-mile round trip*) walk into **Santa Elena Canyon**—one of Big Bend's most scenic spots. Drive to the end of the Ross Maxwell Scenic Drive to access the trailhead. You may return to the main road by returning on the Ross Maxwell Drive or on the **Maverick Road**, a 13-mile gravel road linking the Ross Maxwell Drive to the Maverick (west) Entrance. Always check on road conditions first.

Three Days



With three days to spend in the park, you can explore the major roads more thoroughly and still have time for hiking. In the Basin area, consider hiking the **Window Trail** (5 miles round trip) or the **Lost Mine Trail** (4.8 miles round trip); consult the *Hiker's Guide to Trails of Big Bend National Park*, for sale in park visitor centers, for trail descriptions.

In addition to the Basin and Ross Maxwell Scenic Drive (see suggestions for "one day") you can drive to **Rio Grande Village**, perhaps stopping at Dugout Wells along the way to walk the short Chihuahuan Desert Nature Trail. The Rio Grande Village Visitor Center offers a brief introductory slide program. Walk the **Rio Grande Village Nature Trail** which begins near site #18 in the campground. The bluff overlooking the Rio Grande at the end of the nature trail is a particularly beautiful spot at sunset.

Boquillas Canyon road will take you to several overlooks of the Rio Grande and the small village of Boquillas, Mexico. At the end of the road is the **Boquillas Canyon Trail**, which takes you to the entrance of this spectacular canyon.

One Week



With a week or more to spend in Big Bend, endless possibilities are open to you. You'll have plenty of time to explore the roads mentioned in the previous sections, and will also have time to hike or to drive some of the **"unimproved" dirt roads**. For these, you'll need a high clearance or four-wheel drive vehicle; don't forget to check at visitor centers for current road conditions. The River Road, Glenn Springs Road and Old Ore Road are some of the more popular backcountry routes. A visit to Ernst Tinaja near the south end of the Old Ore Road is a Big Bend highlight.

If you don't have high clearance or four-wheel drive, gravel roads such as Dagger Flat, Grapevine Hills and Maverick will get you "off the beaten path." Hike the Chimneys Trail, Mule Ears Trail, or Grapevine Hills Trail for a closer look at the desert environment. If you'd like to explore the Chisos Mountains, trails to Boot Canyon, Emory Peak and the South Rim offer good views of the park and take you into another world which seems far removed from the desert. There are plenty of opportunities for overnight backpacking along these trails. A free backcountry use permit is required and can be obtained at park visitor centers.

Float The Rio Grande



If you have the time and a spirit of adventure, you may want to consider a river trip. Seeing the park's canyons from the middle of the Rio Grande is both fascinating and gratifying. There are many possibilities, from half-day floats to extended seven-day excursions. Park Rangers can recommend a trip that meets your abilities and interests. Rafting and equipment rental companies are listed on page 14.

See "Backcountry Planning" on page 13 for additional information on Big Bend river trips.

Enjoying Your Visit

No matter how limited your time in Big Bend, remember that you will enjoy the park more if you **stop your car and explore on foot**. That doesn't mean that you have to hike miles on steep grades; there are many short, easy walks and roadside exhibits where you can stretch your legs and enjoy the sights, smells and sounds of the Chihuahuan Desert.

Hiker's guides and road guides are available at book sales areas throughout the park, and they

offer more detailed information about Big Bend's trails and roads. Attending **ranger-led activities** and evening programs are also good ways to learn more about Big Bend; check at the visitor centers and park bulletin boards for current activities.

Remember, you will NOT be able to see everything on this trip. You will probably enjoy the park more if you choose a few spots and explore them thoroughly to get a taste of what Big Bend has to offer. Then, come back again sometime to see the rest!



Big Bend Trails



From the 7,832 foot summit of Emory Peak, to the banks of the meandering Rio Grande, visitors will find over 200 miles of hiking trails in Big Bend National Park. Trails range from strenuous primitive routes through rugged desert backcountry to short handicapped- accessible pathways.

Below are descriptions of many of the most popular easy and moderate hiking trails. Most of these trails are perfect for shorter day hikes of up to several hours. For information on longer, more difficult routes, or to plan an extended backpacking trip, stop by any park visitor center. A large selection of maps and trail guides are available and park rangers can assist you in trip preparations and backcountry permits.




Panther Junction - Rio Grande Village Area

Between Panther Junction and Rio Grande Village lies a vast sweep of scrub desert, rocky ridges, and river floodplain. Sprinkled through this massive area are trails that

highlight the fascinating natural and human history of Big Bend. Discover Indian mortar holes in Boquillas Canyon and the early pioneer settlements of Dugout Wells and Hot Springs. Enjoy the diverse birdlife along the Rio Grande and the rich geology at Grapevine Hills.

One of the more popular areas in Big Bend's east

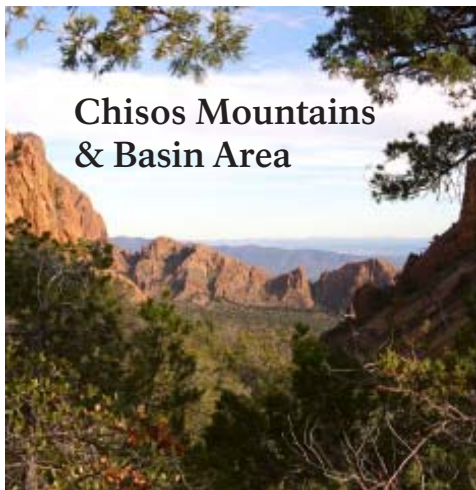
side, is the Hot Springs Historic District. Drift back in time and imagine what life was like during the early 1900s when J.O. Langford developed this natural hot spring into a tiny health resort. A one-mile loop takes you past the old motel, post office, homestead, and foundation of the hot spring bathhouse.

Trail	Roundtrip Length	Comments	Trailhead Location
Grapevine Hills	2.2 miles	Follows a sandy wash through boulder field. A short climb at the end takes you to a large balanced rock archway	Grapevine Hills Road mile 6
 Chihuahuan Desert Nature Trail	0.5 miles	A flat desert path near a cottonwood oasis. Signs interpret Chihuahuan Desert plant life.	Dugout Wells Picnic Area
 Hot Springs	0.75 miles	Walk past historic buildings to the riverside hot springs. 105°F water. <i>Take a bathing suit and soak a while.</i>	End of Hot Springs Road (unpaved)
 Rio Grande Village Nature Trail	0.75 miles	Cross a boardwalk and climb 125 feet to a great panoramic view of the river floodplain and distant mountains. Good birding and sunrise/sunset views.	Rio Grande Village Campground (site 18)
Boquillas Canyon	1.4 miles	Begins with a short climb, then descends via a sandy path to the river. Ends near a huge sand "slide."	End of Boquillas Canyon Road



View near Dugout Wells

T. VandenBerg





Chisos Mountains & Basin Area

The Chisos Mountains form the rugged heart of Big Bend National Park. High ridges and summits coax moisture from passing clouds. The result is a forested mountain "island" surrounded by a desert sea.

When the lower desert trails become uncomfortably hot, enjoy the shady, pine-scented trails of the Chisos Mountains. All Chisos trails begin from the Basin area

which is located in the center of the park.

For a good introduction to the scenery and wildlife of the Chisos, hike the **Window Trail**. From the Basin Campground, this trail winds two miles through colorful Oak Creek Canyon to the top of the Window pouroff. Wildlife is abundant along this trail. Look and listen for javelina, white-tailed deer, and Mexican jays.


Trail	Roundtrip Length	Comments	Trailhead Location
 Window View	0.3 mile	Level, paved, handicapped accessible. Great sunsets and mountain views.	Chisos Basin Trailhead (near the Basin Store)
Basin Loop	1.6 miles	Connects the Laguna Meadow and Pinnacles Trails. Climbs 350 feet through pine/oak woodland. Nice views of the Basin area.	Chisos Basin Trailhead (near the Basin Store)
The Window	5.6 miles	Descends to the top of the Window pouroff. Great scenery and wildlife viewing. Climbs 800 feet on return.	Chisos Basin Trailhead or Basin Campground
 Lost Mine	4.8 miles	This magnificent hike climbs 1,100 feet to excellent mountain and desert views.	Basin Road mile 5 (at Panther Pass)

Ross Maxwell Scenic Drive

The Ross Maxwell Scenic Drive skirts the rocky ramparts of the Chisos Mountains and descends through the spectacular west side of Big Bend National Park. Many of the park's best views and desert hikes are found here.

The Ross Maxwell Drive ends at the trailhead to **Santa Elena Canyon**. There is no better trail to experience the sights and sounds of the Rio Grande. From the parking area, the giant chasm is in full view before you. Hike to the

river's edge and follow it upstream into a world of superlative cliffs and dense thickets of riverside vegetation. Enjoy the sounds of moving water and the descending song of the canyon wren.

Trail	Roundtrip Length	Comments	Trailhead Location
Burro Mesa Pouroff	1.0 mile	A flat, sandy trail up a canyon to the base of a dry pouroff. Interesting geology and desert plants.	Ross Maxwell Dr. mile 11
The Chimneys	4.8 miles	Flat desert trail to prominent rock formations. Look for rock art. No shade.	Ross Maxwell Dr. mile 13
Mule Ears Spring	3.8 miles	A beautiful desert hike to a small spring. Spectacular geology and mountain/desert views.	Ross Maxwell Dr. mile 15
Tuff Canyon	0.75 miles	Balconies overlook this scenic canyon. A short trail leads into and through the narrow gorge carved out of soft volcanic tuff.	Ross Maxwell Dr. mile 20
 Santa Elena Canyon	1.6 miles	Crosses creekbed, climbs stairs, then follows the river upstream into the mouth of a magnificent 1,500 foot deep limestone canyon.	8 miles west of Castolon

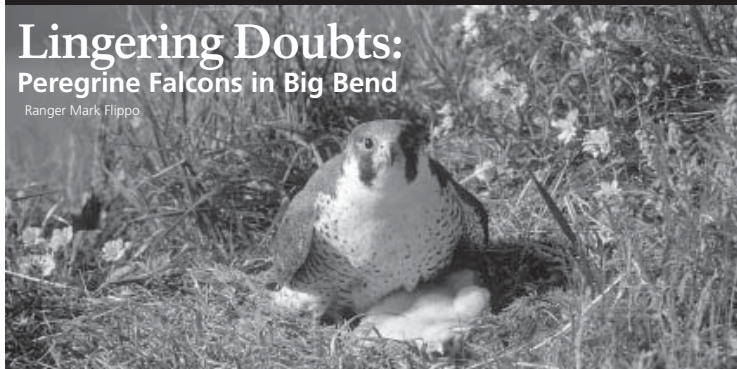


Santa Elena Canyon

K. Trindle

Lingering Doubts: Peregrine Falcons in Big Bend

Ranger Mark Flippo



It's morning on the river, our canoes floating with the slow current. Tendrils of mist rise from the water's surface. Bird songs fill the air from both banks, serenading the early sun. Suddenly, the songs cease, and a heavy silence settles on the river. Downstream, a small raft of ducks scatters into the air as a swift and silent shape approaches like a missile. The hindmost duck, lagging behind its companions, attempts a last second evasive maneuver, but to no avail. Powerful wing strokes carry the missile into a collision with the duck and, in an explosion of feathers, the duck tumbles to the water. The shape, now well defined in our binoculars, is a peregrine falcon. In a soaring loop, the falcon returns to the broken body, deftly plucks it from the river, and flies on strong wings away into the towering canyon walls. Within minutes, bird song again fills the air, the ducks settle back on the river, and we continue our steady float with the current, silent in our witness to the drama of life just played out before our eyes.

The peregrine falcon is one of the top avian predators in the Big Bend, preying upon birds and bats, animals that are obligate insect eaters. Because of its position on top of the food chain, the peregrine is susceptible to environmental contaminants that accumulate in the tissues of their prey. Such was the case when peregrine populations began to plummet worldwide in the 1960s. Persistent toxins unleashed into the environment from widespread pesticide use, particularly DDT, caused eggshell thinning. The falcons failed to reproduce as their eggs crushed beneath them in the nest. In 1970, the peregrine falcon was placed on the federal Endangered Species List.

The banning of DDT in 1972, and successful captive breeding and release projects have returned the peregrine to many former breeding sites and introduced it to new environments among skyscrapers. Today, there are an estimated 1,650 breeding pairs in Canada and the United States. On August 25, 1999, the peregrine falcon was officially removed from the Endangered Species list. Texas however, still lists the peregrine falcon as endangered. Of the less than twenty known breeding pairs in the state, most are found in the Big Bend region.

Beginning in the late 1980s and accelerating in the 1990s, the reproductive success of Big Bend peregrines fell to alarmingly low levels. This period coincided with extended drought conditions in the area and a link to the low productivity was suspected. The impact of drought on wildlife populations is well documented, but concern remained that something else was playing a hidden, more sinister role in the falcon reproductive failure. The historical presence of mining in the region and continued agricultural practices upstream of the park provide sufficient reason to suspect that contaminants still affect peregrines in the Big Bend. To address this concern, the U.S. Geological Survey, the National Park Service, and the Texas Parks and Wildlife Department conducted research to determine the levels of contaminants in potential prey species and their potential impact on peregrine falcon reproduction.

A study in 1997 tested several species of birds and bats, all potential prey of the peregrine, for the presence of environmental contaminants in their tissues. Two heavy metals, mercury (Hg) and selenium (Se) were found in concentrations high enough to cause potential harm to falcons, as well as levels of DDE, a breakdown residue of the pesticide DDT. A follow-up study in 2001 that tested eight species of birds collected along the Rio Grande, also found Hg and Se levels in high concentrations in most of the samples. Of the eight species samples, seven had concentrations of Se greater than the threshold, the level beyond which negative effects can occur. Four of the sampled species had concentrations of Hg far greater than the threshold, high enough to cause potential reproductive failures. Unlike the initial study, concentrations of DDE were detected, but not at levels of concern. The study concluded with two recommendations; further contaminant monitoring to help identify the potential sources Se and Hg, and a detailed hazard assessment to estimate the potential negative effects of Se and Hg on reproduction and productivity of peregrine falcons nesting in the region.

For many, the sight of a peregrine falcon in pursuit of prey, or soaring along towering river canyon walls, is a symbol of hope, of our ability to restore wilderness. Having returned so far from the brink of extinction, the peregrine falcon still faces challenges to its survival and still merits our protection. Through research and application of findings, the solutions for its continued presence may be found.

What Can Kids Do Here?



Big Bend is a great place for kids!

Become a Junior Ranger!

Learn desert secrets, identify the parts of a cactus, and discover what javelina eat!

The Big Bend Junior Ranger program is designed for kids of all ages. Through activities, games, and puzzles, kids can have fun as they learn about the park. They can also earn stickers, badges, patches, and certificates.



The Junior Ranger Activity Book costs \$2.00 and is available at all park visitor centers.

Hike a Trail!

Many park trails are suitable for families. Consult the "Easy and Moderate Hikes" chart on page 9. For children in strollers, consider the Window View Trail, a paved ¼-mile loop trail that begins at the Chisos Basin trailhead.

Big Bend is a special place! We hope you enjoy Big Bend National Park and that you learn to value its resources. If you have any questions, ask a park ranger for help.

Where's All The Wildlife?

"HEY RANGER, WE'VE BEEN DRIVING ALL DAY AND HAVEN'T SEEN ANY ANIMALS. DOES ANYTHING live here?" These questions may have crossed your mind too. You may be surprised to learn that over 3,000 different kinds of animals inhabit Big Bend National Park. While the vast majority of these are invertebrates, over 600 species of vertebrates are also known here.

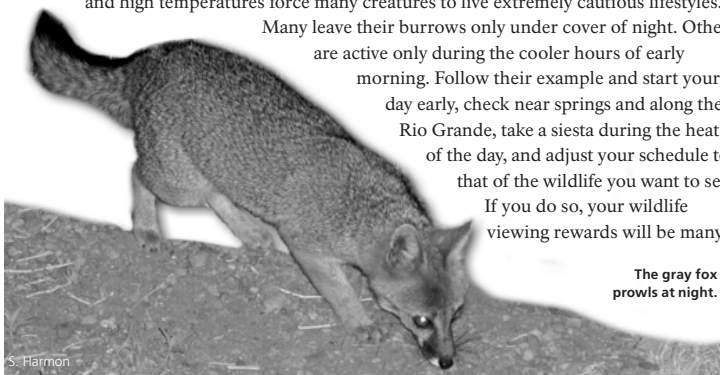
Common invertebrates include tarantulas, wolf spiders, centipedes, millipedes, scorpions, sunspiders, grasshoppers, walking sticks, velvet ants, harvester ants, and mites. Many are active only after summer rains, while others like the grasshoppers and cicadas may be heard singing throughout the heat of the day.

Vertebrates are most popular with park visitors since they include deer, javelina, black bears, and America's favorite watchable wildlife - *the birds*. Checklists of the park's birds, mammals, reptiles, and invertebrates are available at park visitor centers. Researchers have identified over 39 species of fish, 75 species of mammals, 11 amphibians, and 56 reptiles. Big Bend's bird checklist contains 450 species, the largest diversity of birds to be found in any U.S. national park.

The desert landscape may seem completely uninhabited, but the desert is full of surprises. Those who take the time to get out of their car and investigate, will discover abundant evidence of the desert's denizens. Holes, tracks, nests, and droppings are everywhere. Lizards dart by at amazing speed. Listen for the tinkling notes of the black throated sparrow, or the raspy song of the cactus wren. Keep in mind that in desert areas like Big Bend, low rainfall and high temperatures force many creatures to live extremely cautious lifestyles.

Many leave their burrows only under cover of night. Others are active only during the cooler hours of early morning. Follow their example and start your day early, check near springs and along the Rio Grande, take a siesta during the heat of the day, and adjust your schedule to that of the wildlife you want to see.

If you do so, your wildlife viewing rewards will be many.



The gray fox prowls at night.

S. Harmon

"Desert Tracks"

Desert dramas are revealed in sand and soft soil. To see an animal, both you and it must be in the same place at the same time; but tracks may last for days. Below are some commonly seen Big Bend tracks.

Roadrunner



Coyote



Javelina

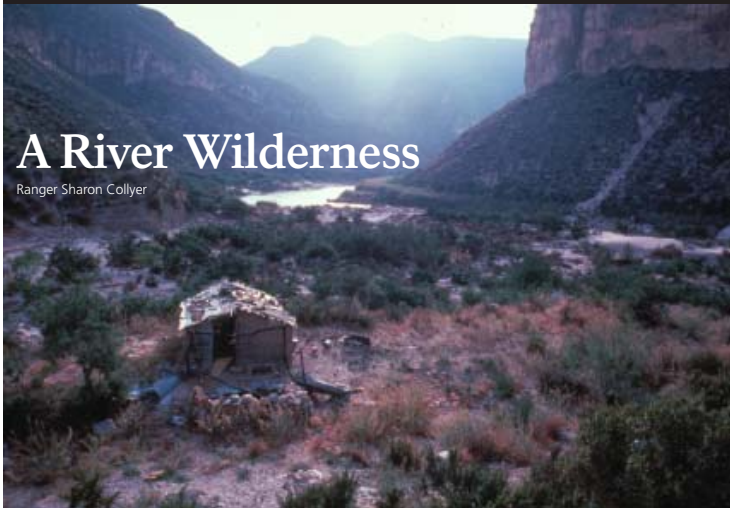


Lizard



A River Wilderness

Ranger Sharon Collyer



The Lower Canyons – three words that convey a certain mystique, a feeling of awe and wonder not linked to any other Big Bend experience. Mention that you’ve floated Big Bend’s shorter canyons, Santa Elena, Mariscal or Boquillas, and you’ll find something in common to talk about. Sheer walls, thick mud, low water levels, tricky river cane, frigid morning air, inner peace...all universal elements of a Rio Grande float trip.

On the other hand, tell an experienced river guide that you’ve done the Lower Canyons, and you’ll be regarded in a different light. By facing the most challenging rapids on the Rio Grande, and experiencing extreme remoteness, you’ll gain the respect reserved for those who’ve been in some of this country’s most inaccessible terrain and survived. Those brave spirits are strong enough to paddle long distances and portage heavy gear, not afraid of being long distances away from any kind of assistance, and can appreciate the magnificent beauty that time and water have created in this almost forgotten realm of rock and river.

In 1978, a 196-mile section of the Rio Grande, from Mariscal Canyon to the Terrell-Val Verde county line, was designated by Congress as a Wild and Scenic River, a designation the Rio Grande shares with over 150 other rivers in the United States. Rivers that bear this designation are to be preserved in their free-flowing condition, and their ecosystems actively protected in their natural state. Of the country’s 3.5 million miles of rivers, 10,763 miles bear this honor. In fact, only 2% of the rivers in the U.S. are free-flowing and pristine enough to qualify for Wild and Scenic designation. The designation for the Rio Grande came as recognition of the ecological importance of the riparian and canyon habitat within the free-flowing section of river that borders Big Bend National Park. To anybody that has floated the Rio Grande, the Wild and Scenic designation is obvious unto itself: the Rio Grande is wild, the Rio Grande is scenic. Point made.

Past Big Bend’s eastern boundary, the Rio Grande enters a system of desert canyons 83 miles long. This is truly the heart and soul of the Wild and Scenic River, providing outstanding opportunities for solitude and wilderness experience. Approximately 1300 daring individuals a year embark on this journey, which takes them from the historic La Linda crossing to the remote Dryden take-out. Those that choose to undertake this adventure generally have extensive river experience and are fully self-reliant, since help is often many days away. Needless to say, a Lower Canyons trip is not for everyone. Extensive preparation is essential to keep mishaps to a minimum.

When paddlers enter the Lower Canyons, they disappear from the “real world,” passing days and nights confined in a narrow gorge hundreds of feet high. The immediate detail a first-time visitor notices is the absolute silence. Heartbeats echo in eardrums. Sounds of breathing are amplified. At first, paddlers learn to speak in hushed whispers; then, they may not speak at all. The hypnotic rhythm of paddling is broken now and then by the lilting song of canyon wrens, or the reverberating braying of the occasional burro. Have you ever experienced stillness so intense that a single sneeze sounds like an offensive explosion?

Silence is intermittently shattered by the low, almost imperceptible rumbling of upcoming rapids; rumblings soon turn into a deafening roar of water slamming against rock. At this point the question is: run the rapid, or not run the rapid? Running the rapid will take ten seconds. Portaging around the rapid may take an hour. Running the rapid is guaranteed bragging rights. Portaging is guaranteed survival. You’ve heard stories... helicopter rescues, flipped canoes, kayaks smashed to smithereens. After scouting the rapid from the safety of the shoreline, what will *you* decide to do?

A Lower Canyons trip is not all about endless paddling. Walks into side canyons and visits to abandoned homesteads and old candelilla camps are definite highlights. Dips in the river and lounging under the shade of a cottonwood in the heat of the day are perfect ways to pass the time. Camps need to be set up, meals need to be prepared. Great conversations, friendships, and memories must be made. Time becomes a worry of the past and it doesn’t take long to forget the stresses and habits of modern life. Your schedule will run solely by the natural rhythms of biological needs and the nuances of canyon living.

However, all is not perfect in paradise. Scenic and environmental values of the Lower Canyons are in great danger of being lost forever. The canyons have changed dramatically over the last 100 years. Although the towering rock walls remain unchanged, other features have been altered drastically by the influence of human activity upstream.

Because of dams, the Rio Grande no longer floods seasonally as it historically did. The floods created banks where cottonwood/willow *bosques* took root, providing habitat for native wildlife. Now, the Rio Grande has become a highway for pollutants and exotics, carrying unwanted toxins and organisms downstream into valuable habitats. Low water levels induced by damming have impacted native fish populations by concentrating toxic pollutants in the river to lethal levels. Feral livestock have destroyed delicate areas by stripping away vegetation that maintains fragile soils, turning entire banks into sandy wastelands. Water-loving invasive plants, such as river cane and tamarisk, take hold along the river’s edge, diminishing the flow of natural springs and changing the composition of the river’s riparian habitat.

How does all this affect *people*? To begin with, a river must have water to be navigated. In the summer of 2003, for the first time since 1955, sections of the Rio Grande dried up, making river trips difficult to undertake. An entire social structure of outfitters and guides has taken an economic blow due to the diminished flow. Those who venture into the river find that hiking up the side canyons is a difficult feat these days, since river cane has choked many access points. Tamarisk has obscured historic sites that go back hundreds of years. Clean water sources are hard to find. Some popular campsites have completely disappeared. The list, quite frankly, is endless. Perhaps the most significant impact to those that have run the Lower Canyons is that of the intangible sort; it is the feeling that something very valuable is being decimated, and there is simply no way to stop the inevitable from occurring.

When paddlers reach Dryden days after leaving the “real world” behind, they arrive *changed*. Many of the changes are physical: tanned faces, stronger arms, thinner bodies, relaxed grins, knotted hair...and the demanding need for a hot shower. The most significant changes, however, are not plainly visible. These are the changes that occur in the heart and mind of individuals that have created a bond with the exquisite beauty of the river. In the Lower Canyons, paddlers are not simply casual observers of the events taking place before them; they *are* part of the events in progress, and must respond to the forces of nature to survive. And now, they must respond to the forces that threaten this wilderness.

Despite these circumstances, the Lower Canyons continues to be the trip of a lifetime for those who find comfort in solitude and wilderness. Through the National Park Service, the Rio Grande Wild and Scenic River remains one of our protected public national treasures. We hope that the ecological lessons learned from this muddy, shallow, and unpredictable river will help us protect other rivers and riparian areas, not just for the sake of river runners, but for each and every one of us. The need for clean and healthy waterways is a universal ingredient in our quality of life; after all, we ALL live downstream.



A lone kayaker regards the river.

Ranger Programs



Join a park ranger for a guided hike, evening slide show, talk, or workshop on Big Bend's natural and cultural history. These free programs are offered daily. Consult the Interpretive Activities Schedule posted on visitor center and campground bulletin boards for more information.

Lodging



The Chisos Mountains Lodge, operated by Forever Resorts Inc., is located in the Chisos Basin at 5,400 feet elevation. The lodge offers a variety of rooms and cottages, plus a gift shop and dining room. For reservations, please call (432) 477-2291 or 2292.

Banking



There are NO banking facilities in Big Bend National Park. The nearest banking/ATM services are located in Study Butte, 26 miles west of park headquarters. Most stores accept major credit cards; however, some local services accept only cash. It is advisable to have small bills (\$1, \$5, \$10, \$20) since larger bills are often difficult to change.

Birdwatching



The spring season is upon us, and with it comes the annual migration of birds through Bend National Park. Of the nearly 450 species on the official park checklist, almost 190 (42%) are migrants that pass through the region to breeding grounds farther north. Such diversity offers much to those who plan their vacations around the potential for viewing birds.

Camping



Tent Camping

The National Park Service operates campgrounds at Rio Grande Village, the Chisos Basin, and Castolon. The cost is \$10.00 per night for a site. Campsite fees can be paid in US currency or personal checks. Campsite reservations are available November 15th through April 15th for sites in the Chisos Basin and Rio Grande Village campgrounds. Reservations are made through ReserveUSA: 1-877-444-6777 or via the internet at www.reserveusa.com. All remaining campsites in these two campgrounds and the entire Cottonwood campground remain on the first-come first-serve basis.

Camping is also available at **primitive backcountry campsites** in the Chisos Mountains and along backcountry roads. High-clearance or 4-wheel drive vehicles are necessary to reach most road sites. Backcountry permits are required and can be obtained in person at park visitor centers up to 24 hours in advance.

Groups of 10 or more are eligible to reserve a spot in one of the park's **group campsites**. Reservations may be arranged year-round through ReserveUSA.

Camping areas are often full during the Thanksgiving and Christmas holidays, as well as during spring break in March or April.



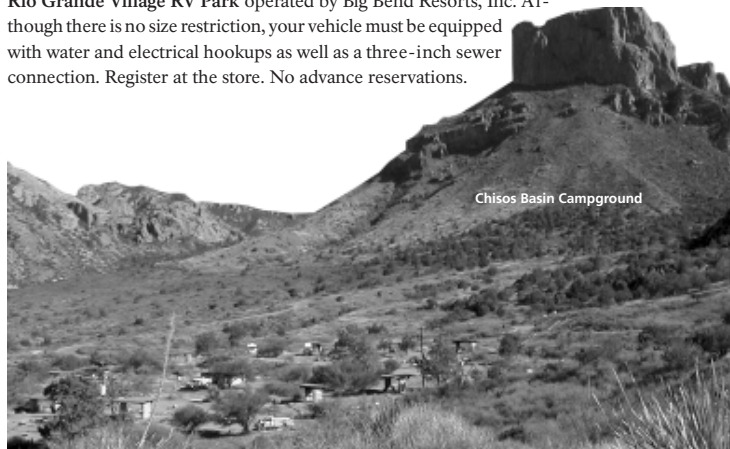
The only showers and laundry facilities in the park are located at the Rio Grande Village store.



Trailers & RV's

All park campgrounds can accommodate trailers and RVs, but vehicle lengths have a great deal to do with safely reaching the campground and finding a suitable space.

The only hookups available in Big Bend National Park are at Rio Grande Village in the 25-site, **Rio Grande Village RV Park** operated by Big Bend Resorts, Inc. Although there is no size restriction, your vehicle must be equipped with water and electrical hookups as well as a three-inch sewer connection. Register at the store. No advance reservations.



Chisos Basin Campground

Near the RV park is the 100-site **Rio Grande Village Campground** operated by the National Park Service. Although there are no hookups, water, flush toilets, and a dump station are available. Set in a large grove of cottonwoods, the campground is adjacent to the Rio Grande. Many of the sites are pull-throughs. **Generator use is limited: from 8:00 am to 8:00 pm daily.** A no-generator use area is also designated.

The 65-site **Chisos Basin Campground** is rugged and hilly. The sites are small and most are not suited to recreational vehicles or trailers. The road to the Basin is steep and curvy, especially at Panther Pass—the road's highest point. The road into the campground is a 15 percent grade. Trailers longer than 20 feet and RVs longer than 24 feet are not recommended.

Cottonwood Campground, near Castolon, offers pit toilets and potable water, but no hookups or dump station. **Cottonwood is a NO-generator campground.**

Big Bend's unpaved roads are generally unsuitable for RV's and trailers. Overnight camping in any primitive site requires a backcountry permit, obtained in person at park visitor centers up to 24 hours in advance.

The annual spring migration begins in late February. Through March and April the number of migrants increases steadily until peaking in the last two weeks of April and the first week of May. In this rush of birds are many neotropical migrants returning from wintering ranges in Latin America. Most pass through, but some remain the summer to nest and raise their young. Among the expected passage migrants comes the occasional rare and accidental species that have wandered off their normal course or are pushing the extreme edge of their normal range. A well-documented **black-bellied whistling duck** at Rio Grande Village last spring moved that species from hypothetical to confirmed status, and an **Aztec thrush** in Boot Canyon, a species not seen here since 1982, provided a third park record. For the birder who wishes to observe the many expected migrant and resident species, and perhaps have the chance to find that once-in-a-lifetime rarity, patience and knowing where to look are the keys.

If you are limited for time, or are here early in the spring, head to the river. Nearly 75% of all the listed species have been observed in riparian areas. Gray, common black, and zone-tailed hawks are all probable in cottonwood areas along the river during the spring. The diversity of flycatchers there is high, from confusing *Empidonax* species to the unmistakable and eye-stopping vermilion flycatcher, from subtle ash-throated and brown-crested flycatchers to noisy Cassin's, western and tropical kingbirds. The beautiful male painted bunting is most easily seen along the river, as well as the impressive hooded oriole. Whether from a trail or a canoe, birding the river will be productive.

If more time is available, visit other habitats in the park. The pinyon-oak-juniper belt (Upper Green Gulch, Lost Mine Trail, and around the Chisos Basin) is another productive habitat, particularly for acorn woodpecker, Mexican jay, and black-crested titmouse. If the Colima warbler is a goal, then hikes to the moist woodland canyons of the high Chisos (Pine and Boot Canyons) are necessary. The grassland/shrub community along the lower slopes of the Chisos, and the lower desert areas can yield many species, including Lucifer hummingbird, once yuccas, sotol and agaves bloom. Working these key habitats will provide the best opportunities to see birds and build a "Big Bend List."

While you are enjoying the birds, keep in mind that many of the migrant species you may observe are members of populations in decline. You can help in several ways: tread softly in fragile habitat and don't damage water sources; don't disturb nesting birds with excessive noise or intrusive attempts at photography. Please share your observations with us, particularly of rare or accidental species. Your detailed report becomes part of the record and can be an aid to researchers. Enjoy the birds of spring, and do all that you can to ensure their return next year.

Park Campgrounds

	Elevation	Sites	Nightly Fees:	Facilities	Registration	Comments
Chisos Basin	5,401 ft	63	\$10.00*	Flush Toilets, Dump Station	Self-pay station	Surrounded by rocky cliffs. Many hiking trails nearby.
Cottonwood	2,169 ft	31	\$10.00*	Pit Toilets, No Generators	Self-pay station	In a cottonwood grove along the river. Grassy sites. Good birding.
Rio Grande Village	1,850 ft	100	\$10.00*	Flush Toilets, Dump Station	Self-pay station	Largest campground. Shady sites. Laundromat and showers nearby.
Rio Grande Village RV	1,850 ft	25	Starts at \$18.00	Full Hookups	Inquire at RGV Camper's Store	Concession-operated. Adjacent to RGV store.

* \$5.00 with Golden Age or Golden Access Passport

Horses

Visitors are welcome to bring and use their horses in the park. A free stock-use permit is required and may be obtained in person at any of the park's visitor centers up to 24 hours in advance of the trip.



While horses are not permitted on paved roads or road shoulders, all gravel roads are open to horses. Cross-country travel is permitted in the park, except in the Chisos Mountains where horse use

is limited to the Laguna Meadow, Southwest Rim, and Blue Creek trails. Horses are not permitted on nature trails, the Santa Elena and Boquillas Canyon Trails, or the Pine Canyon Trail, nor are they permitted in picnic areas.

Grazing within the park is not permitted, so you must bring your own feed. Stock may be watered in the Rio Grande and at springs that are not used for domestic water supply. Be prepared to haul water for your stock as springs are unreliable, especially during winter months. Check current spring conditions at a visitor center when you arrive. All horse manure must be removed from the park, or deposited at a designated location near the NPS horse corral at Panther Junction (ask a ranger for directions).

You may camp with your horses at many of the park's primitive road campsites. These are available on a first-come, first-served basis through a free backcountry use permit available at park visitor centers. These campsites are especially difficult to obtain during holiday periods, especially spring break.

Camping with horses is not permitted in any of the park's developed campgrounds. Government Springs campsite, located 3½ miles from Panther Junction, is a primitive campsite with a corral large enough for 4-8 horses. If you plan to bring horses to the park, you may reserve this campsite up to 10 weeks in advance by calling (432) 477-1158.

Hiking & Backpacking

Big Bend National Park offers over 100 miles of hiking trails. A free permit is required for all overnight trips, and can be obtained in person only up to 24 hours in advance of the trip. Because of the unreliability of desert springs, it is difficult to plan an extended backpacking trip prior to your arrival in the park. Decide how much distance you want to cover and how much time you have. Park staff can assist you with trip planning based on your needs and current trail conditions. The Panther Junction Visitor Center is open daily from 8:00 a.m. to 6:00 p.m.

Backpacking sites in the Chisos Mountains are difficult to obtain during the Thanksgiving and Christmas holidays, and during spring break in March and early April.

Maps and hiker's guides are available for purchase at park visitor centers. If you would like to order them in advance of your trip, call the Big Bend Natural History Association at (432) 477-2236 or visit their online internet bookstore at www.bigbendbookstore.org



Pets are not allowed on trails or in back-country areas. Please leave pets at home if you plan to hike.

The Southeast Rim of the Chisos Mountains, Mariscal Rim, and Casa Grande are closed during the peregrine falcon nesting season (February 1 - July 15).

Weather

Elevational differences in Big Bend mean that temperatures can be vastly different in different areas of the park. The lower areas along the Rio Grande are very hot during the summer months, while the Chisos Mountains are considerably cooler. Winter weather generally occurs between November and February, with temperatures dropping dramatically as cold fronts move through the area. Between June and October thunderstorms and flash floods may occur. Bring clothing for both warm and cool weather, as well as rain gear, when visiting Big Bend any time of the year. See "how hot?" on page 15.

Floating the Rio Grande

The Rio Grande follows the southern boundary of Big Bend National Park for 118 miles. In this distance it has carved three major canyons, Santa Elena, Mariscal, and Boquillas, which have rapids varying in difficulty from Class I to Class IV. Between the canyons, the river is generally slower-paced. The Rio Grande Wild and Scenic River extends downstream beyond the park boundary for an additional 127 miles.

If you plan to take a river trip in Big Bend National Park, you may bring your own equipment, or you can hire a guide service. Four local companies (see page 14 for telephone listings) provide guide service in the park—you may reserve a trip by contacting them directly.



If you plan to use your own equipment, you must obtain a free permit at a park visitor center. Permits are issued up to 24 hours in advance of your trip, in person only. Stop by the Panther Junction Visitor Center for your permit and for current river condition information prior to your trip.

Permits for the Lower Canyons of the Rio Grande Wild and Scenic River may be obtained at the Persimmon Gap Visitor Center, when open; a self-permitting station is also located at Stillwell Store, 5 miles south on FM2627 on the way to La Linda, Mexico. Permits for floating Santa Elena Canyon may be obtained at the Barton Warnock Center in Lajitas. Only permits for Santa Elena Canyon may be written there. However, we encourage all parties to get their permits at a park visitor center when possible, to obtain the most up-to-date river information and conditions.

River guide booklets are available for purchase at park visitor centers. If you would like to order them in advance of your trip, call the Big Bend Natural History Association at (432) 477-2236 or visit their online internet bookstore at www.bigbendbookstore.org



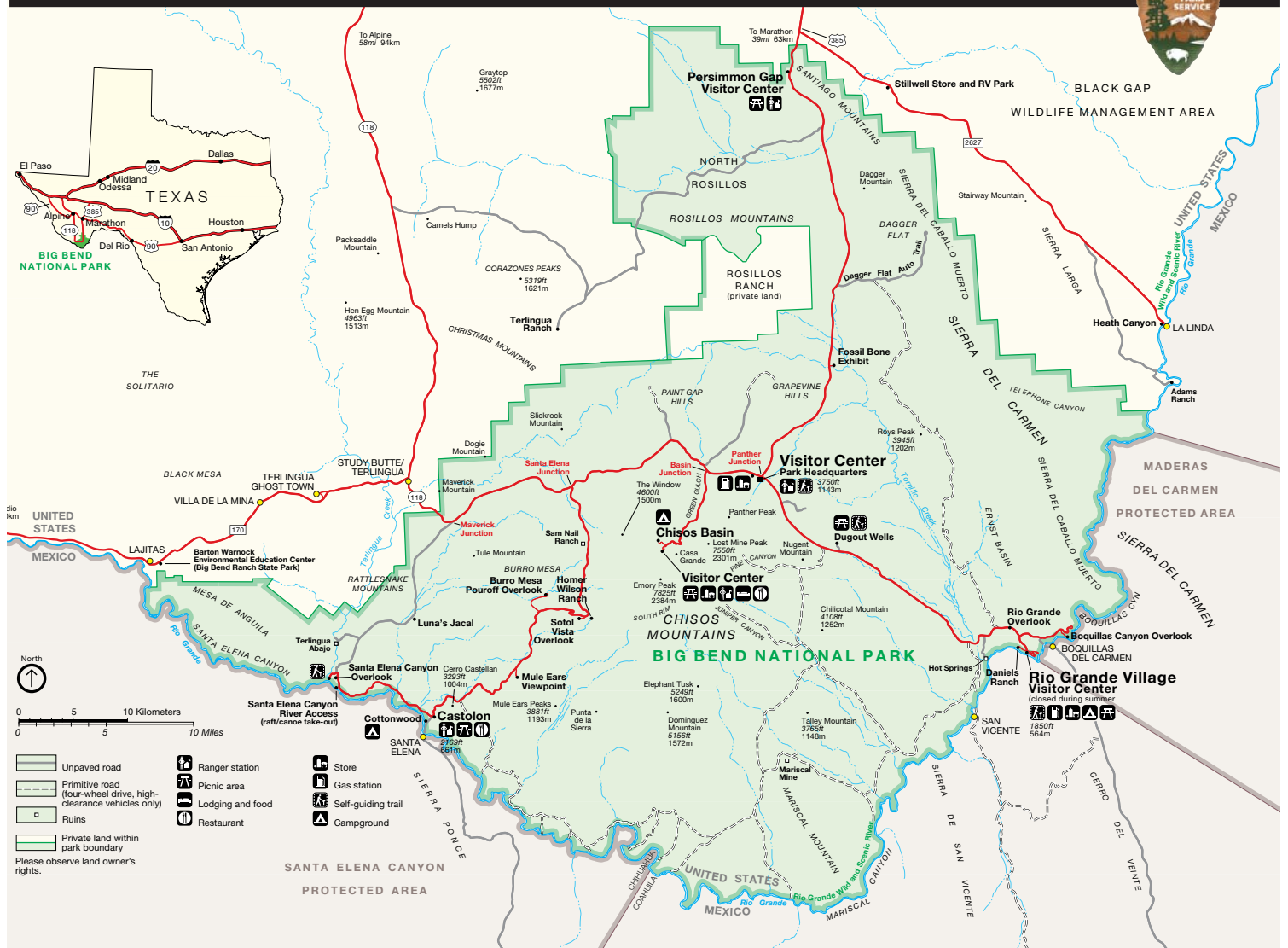
Keep Big Bend Beautiful

For your convenience, barrels for recycling cans, glass, and plastic bottles are located at the entrances of park campgrounds.



F. Labounty

Park Map



Local Services

Inside The Park (432)

EMERGENCY

911

National Park Service

General Information 477-2251

Big Bend Natural History Association

Booksales & Seminars 477-2236

Visitor Centers & Ranger Stations

Castolon Ranger Station 477-2225
Chisos Basin Visitor Center 477-2264
Panther Junction Visitor Center 477-1158
Persimmon Gap Visitor Center 477-2393
Rio Grande Village Visitor Center 477-2271

U.S. Post Office

Panther Junction 477-2238

Lodging / Restaurant

Chisos Mountains Lodge 477-2291
477-2292

Park Gasoline Service

Panther Junction (also diesel) 477-2294
Rio Grande Village 477-2293

Campground Stores

Rio Grande Village 477-2293
Chisos Basin 477-2291
Castolon 477-2222

Outside The Park (432)

Lodging

Badlands Motel, Lajitas 424-3471
Big Bend Motor Inn, Study Butte 800-848-BEND
Easter Egg Valley Motel, Study Butte 371-2254
El Dorado Motel, Terlingua 371-2111
Gage Hotel, Marathon 386-4205
Heath Canyon Ranch Inn, FM 2627 376-2235
Longhorn Ranch Hotel, Hwy. 118 371-2541
Marathon Motel, Marathon 386-4241
Terlingua Ranch Resort 371-2416

Camping

Big Bend Motor Inn, Study Butte 800-848-BEND
Big Bend Ranch State Park, Lajitas 424-3327
Big Bend Travel Park, Study Butte 371-2250
Lajitas on the Rio Grande 424-3471
Longhorn Ranch, Study Butte 371-2541
Ocotillo Mesa RV Park, Study Butte 800-729-1406
Stillwell's Trailer Camp, FM 2627 376-2244
Study Butte RV Park 371-2468
Terlingua Ranch Resort 371-2416

Gas Stations & Grocery Stores

Big Bend Motor Inn (gas, diesel) 800-848-BEND
Lajitas Trading Post (gas, supplies) 424-3234
Study Butte Store (gas/diesel/groceries) 371-2231
Stillwell Store & Station (gas) 376-2244

Medical Services

Terlingua Medics 371-2222
Lajitas Infirmary 424-3536
Big Bend Regional Medical Center, Alpine 837-3447

Banks

Quicksilver Bank & ATM, Study Butte 371-2211

Kennels

Terlingua Creek Kennels, (Oct-Apr) 371-2348

Guide Services

Big Bend Touring Society, Terlingua 371-2548
Texas Jeep Expeditions 877-839-JEEP

Rio Grande Float Trip Outfitters/Rentals

Big Bend River Tours, Study Butte 800-545-4240
Desert Sports, Terlingua 888-989-6900
Far Flung Adventures, Study Butte 800-359-4138
Rio Grande Adventures, Study Butte 800-343-1640
TX River Expeditions, Study Butte 800-839-7238

Horseback Riding

Big Bend Stables, Study Butte 800-887-4331
Lajitas Stables, Lajitas 424-3238
Spring Creek Remuda, 23 mi. south of Marathon 376-2260
Ben's Hole Creek Ranch, Terlingua 371-2954

Let Safety Be Your Constant Companion

Big Bend is unfamiliar country to most visitors yet it need not be dangerous. Whether hiking the highcountry, rafting the Rio Grande, observing wildlife, or simply driving the scenic roads of this wilderness park, let safety be your constant companion. Spend a moment reviewing these common safety concerns so that you may have an enjoyable visit.

Driving

Many accidental deaths in Big Bend result from car accidents. While driving is a great way to see the park, it can also be dangerous, particularly if you are tired or are going too fast. Drive within the speed limit, 45 mph maximum in the park, and watch for javelina, deer, and rabbits grazing along road shoulders, especially at night. Seat belts are required at all times. Remember, too, that you share the road with bicyclists and pedestrians. Some park roads, such as the road into the Chisos Mountains Basin, are steep and winding and require extra caution. The Basin Road is not recommended for RVs over 24 feet or trailers over 20 feet. Finally, always select a designated driver before drinking alcoholic beverages.

Heat

Desert heat can kill you. Carry plenty of water (at least one gallon per person, per day) and wear a hat, long pants, long-sleeved shirt, and sun screen when hiking. Springs are unreliable and often dry up for a portion of the year, despite what maps indicate. Avoid hiking during mid-day in summer; travel as wild animals do, in the early morning or late evening hours rather than during the heat of the day.

Mountain Lions

Big Bend is mountain lion country, especially the Chisos Mountains. While lion attacks are rare, three have occurred in the last 10 years. Should you encounter an aggressive mountain lion, hold your ground, wave your arms, throw stones, and shout. Never run. Keep groups together and consider hiking elsewhere with young children if you come across a special mountain lion warning sign posted at a trailhead.

Desert Wildlife

Black bears, javelinas, skunks, coyotes, and raccoons frequent Big Bend's campgrounds. Although they sometimes appear tame, all of the animals in the park are wild, and could pose a threat to your health and safety if you attempt to approach or feed them. Never feed any of Big Bend's wildlife. To prevent these creatures from becoming habituated to people, store all food, coolers, cooking utensils, and toiletries in a hard-sided vehicle, preferably in the trunk of your car. Food storage lockers are available for hikers and campers in the Chisos Mountains. Dispose of garbage properly. At the Chisos Basin Campground, throw away garbage in the special bear-proof dumpsters and trash cans provided. Remember to report all bear or lion sightings to a ranger.

Hiking

Exploring this desert and mountain country on foot requires both mental and physical preparation. Trails vary from well maintained in the Chisos to primitive and barely visible in the desert. Plan hikes within your ability. Take along a map and compass and know how to use them. Flash floods may occur following thunderstorms so avoid narrow canyons or dry washes. Stay low and avoid ridges during thunderstorms. Carry a flashlight and a first aid kit. Let someone know where you're going and when you expect to return. If you get hurt or lost, stay in one place to conserve water and energy. Signal for help; three blasts on a whistle is a well-recognized distress call. In remote areas, a large "X" marked on the ground by any means visible from the air will signify that help is needed. Carry a signal mirror. Remember to obtain a free backcountry use permit before heading out overnight.

Fire

Fire danger is always an important safety consideration in Big Bend. Wood or ground fires are not permitted in the park, and you must exercise caution in the use of gas stoves, charcoal grills, and cigarettes. Big Bend has experienced drought conditions in the past several years and some restrictions may apply to the use of these heat sources. Check with a ranger for the latest information about fire safety in the park.

Swimming

Hot weather makes the muddy Rio Grande look very inviting, but swimming is not recommended.

Water borne micro-organisms and other waste materials can occur in the river and cause serious illness. The river can be hazardous, even in calm-looking water. Strong undercurrents, deep holes, and shallow areas with sharp rocks and large tree limbs are common and make the Rio Grande unsafe for swimming. If you do choose to swim, wear a life jacket and avoid alcohol.

Poisonous Animals

Venomous snakes, scorpions, spiders, and centipedes are all active during the warmer months. Inspect shoes and sleeping bags or bedding before use and always carry a flashlight at night. While snake bites are rare, they usually occur below the knee or elbow. Pay attention to where you walk and place your hands.

Big Bend truly is wild country. In fact, many people visit precisely because it is so remote and rugged. But remember, as you enjoy the splendor of this great wilderness area, to make safety a priority. By giving forethought to your actions you can have a safe, exciting, and rewarding vacation in Big Bend National Park.

Keep The Wild in Wildlife!

Javelina are wild and can be dangerous...



Regulations are strictly enforced!

How Hot?

PANTHER JUNCTION
elevation 3,750 feet

	Avg.High/Low	Avg.Rainfall"
January	61/35	.46
February	66/34	.34
March	77/45	.31
April	81/52	.70
May	88/59	1.50
June	94/66	1.93
July	93/68	2.09
August	91/66	2.35
September	86/62	2.12
October	79/53	2.27
November	66/42	.70
December	62/36	.57
yearly average:	79/47	15.34"

Temperatures in the Chisos Basin vary 5-10 degrees below these readings, while daytime temperatures along the Rio Grande average 5-10 degrees warmer.

Pet Owners

Keep your pet on a leash (or in a cage) at all times. Pets are not allowed on park trails, or anywhere off established roadways. Pets may not be left unattended in the park.

A National Park is a refuge for the animals and plants living within it. Even if your pet doesn't chase animals, dogs present the image and scent of a historical predator. The result is stress on native wildlife.

Predators such as owls, coyotes, javelina, and lions CAN and DO kill pets here. Even large dogs cannot defend themselves against such predators.

Remember, desert heat is **deadly**. Do NOT leave your pet alone in a vehicle. Pets are not allowed on trails, off roads, or on the river. The nearest kennel service is in Terlingua, 30 miles away.





National Park Service
U.S. Department of the Interior

Big Bend National Park
PO Box 129
Big Bend, TX 79834
www.nps.gov/bibe



Big Bend Natural History Association
PO Box 196
Big Bend National Park, TX 79834
www.bigbendbookstore.org

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PO Box 200
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www.bigbendfriends.org

EXPERIENCE YOUR AMERICA

Join Our Family



Please accept our invitation to join the Big Bend Natural History Association

The Association's goal is to educate the public and increase their understanding and appreciation of the Big Bend Area and what it represents in terms of our historical and natural heritage. You can be an important part of this effort when you become a member.

BBNHA was founded in 1956 to aid educational, historical, and scientific programs for the benefit of Big Bend and its visitors.

Your Benefits as a Member

- A 15% discount on items sold by BBNHA
- A 10% discount on most seminars
- A subscription to *The Big Bend Paisano*
- Current Big Bend calendar
- Discounts at many other association bookstores in visitor centers at other national park sites
- Opportunity to support scientific, educational, and historical programs in Big Bend

Past and present projects include:

- Operate book sales outlets in Big Bend National Park and Amistad National Recreation Area
- Publish trail guides and brochures and assist with the publication of *The Big Bend Paisano*
- Sponsor an on-going Seminar program
- Provide annual grants for research projects and administer grants and gifts received for the park
- Support the park's volunteer, Junior Ranger, and educational outreach.

Yes!

Please enroll me as a member of BBNHA

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Signature _____

DETACH AND MAIL TO:

BBNHA, P.O. Box 196
Big Bend National Park, Texas 79834
Telephone: (432) 477-2236
e-mail: bibe_bbnha@nps.gov



S. Little